IN THE CLAIMS:

Cancel Claims 1-26, 28-31 and 375-381.

Add new Claims 382-402.

1-381 (Canceled)

382. (New) A method of reducing the damage done by reactive oxygen species (ROS) in a neurodegenerative disease in an animal comprising administering to the animal an effective amount of:

a metal-binding peptide, the sequence of the peptide being:

$$P_1 - P_2$$

wherein:

 P_1 is:

Xaa₁ Xaa₂ His or

Xaa, Xaa, His Xaa,;

 P_2 is $(Xaa_4)_n$;

 Xaa_1 is the N-terminal amino acid of the peptide, Xaa_1 has an unsubstituted α -amino group, and Xaa_1 is glycine, alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α -hydroxymethylserine;

Xaa₂ is glycine, alanine, β -alanine, valine, leucine, isoleucine, serine, threonine, aspartic acid, asparagine, glutamic acid, glutamine, lysine, hydroxylysine, histidine, arginine, ornithine, phenylalanine, tyrosine, tryptophan, cysteine, methionine, or α -hydroxymethylserine;

Xaa₃ is glycine, alanine, valine, lysine, arginine, ornithine, aspartic acid, glutamic acid, asparagine, glutamine or tryptophan;

Xaa4 is any amino acid; and

n is 0-5; or

a physiologically-acceptable salt of the peptide P₁ - P₂;

wherein the peptide $P_1 - P_2$ or the physiologically-acceptable salt of $P_1 - P_2$ does not have a transition metal ion bound to it when it is administered to the animal.

- 383. (New) The method of Claim 382 wherein Xaa₁ is aspartic acid, glutamic acid, arginine, or α -hydroxymethylserine.
- 384. (New) The method of Claim 382 wherein Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, methionine, histidine or α -hydroxymethylserine.
 - 385. (New) The method of Claim 382 wherein Xaa, is present and is lysine.
- 386. (New) The method of Claim 382 wherein Xaa_1 is aspartic acid, glutamic acid, arginine, or α -hydroxymethylserine, Xaa_2 is glycine, alanine, valine, leucine, isoleucine, threonine, serine, asparagine, methionine, histidine or α -hydroxymethylserine, and Xaa_3 , when present, is lysine.
- 387. (New) The method of Claim 386 wherein Xaa_1 is aspartic acid or glutamic acid and Xaa_2 is alanine, glycine, valine, threonine, serine, or α -hydroxymethylserine.
- 388. (New) The method of Claim 387 wherein Xaa_2 is alanine, threonine or α -hydroxymethylserine.
 - 389. (New) The method of Claim 388 wherein Xaa₁ is aspartic acid and Xaa₂ is alanine.
 - 390. (New) The method of Claim 389 wherein Xaa, is present and is lysine.
- 391. (Withdrawn new) The method of Claim 382 wherein at least one of the amino acids of P_1 other than β -alanine, when present, is a D-amino acid.
- 392. (Withdrawn new) The method of Claim 391 wherein all of the amino acids of P_1 other than β -alanine, when present, are D-amino acids.
- 393. (Withdrawn new) The method of Claim 391 wherein at least 50% of the amino acids of P_2 are D-amino acids.
 - 394. (New) The method of any one of Claims 382-392 wherein n is 0.
- 395. (New) The method of any one of Claims 382-393 wherein the neurodegenerative disease is Alzheimer's disease.
- 396. (New) The method of Claim 394 wherein the neurodegenerative disease is Alzheimer's disease.
- 397. (New) The method of any one of Claims 382-393 wherein the neurodegenerative disease is Parkinson's disease.
- 398. (New) The method of Claim 394 wherein the neurodegenerative disease is Parkinson's disease.

- 399. (New) The method of any one of Claims 382-393 wherein the neurodegenerative disease is senile dementia.
- 400. (New) The method of Claim 394 wherein the neurodegenerative disease is senile dementia.
- 401. (New) The method of any one of Claims 382-393 wherein the neurodegenerative disease is multiple sclerosis.
- 402. (New) The method of Claim 394 wherein the neurodegenerative disease is multiple sclerosis.